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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,451	06/19/2001	Robert Dolan	101361-0043	1957

7590 12/01/2004  
NUTTER, MCCLENNEN & FISH, LLP  
Reza Mollaaghababa  
One International Place  
Boston, MA 02110-2699

EXAMINER

MALDONADO, JULIO J

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/884,451

Applicant(s)

DOLAN ET AL.

Examiner

Julio J. Maldonado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,6-13 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-13 is/are allowed.
- 6) ☒ Claim(s) 1,6,7 and 20-25 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6, 7 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakaguchi et al. (U.S. 6,313,014 B1) in view of Ogura et al. (U.S. 6,506,662 B2).

In reference to claims 1 and 20-25, Ogura et al. (Figs.1C-3) in a related method to form a buried oxide layer by ion irradiation teach as a preferred embodiment of the invention dissociating water molecules ( $H_2O$ ) in a plasma chamber (10) to obtain positive ions; and introducing said ions into a reaction chamber (30) where the substrate (40) to be implanted is provided therein, wherein said ions include oxygen ions and a fluid other than oxygen comprising hydrogen (column 3, lines 60 – 65, column 4, lines 1 – 4, column 8, line 61 – column 9, line 2 and column 9, lines 54 – 62).

Ogura et al. fail to teach as part of the preferred embodiment of the invention to implant oxygen ions in the presence of said fluid. However, in a non preferred embodiment, Ogura et al. teach performing the implantation process where there is no separation of the between the plasma chamber and the reaction chamber, with the disadvantages of hindering controlling the accelerated ions, resulting in difficulties in obtaining an abrupt interface of the insulation film to the silicon layer overlying the

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insulation film (column 7, lines 11 – 21). Furthermore, Ogura et al. teach that the introduction of said oxygen ions and said fluid occurs before said implantation of said oxygen ions.

Although not taught as a preferred embodiment, Ogura et al. teaches this embodiment nonetheless, and disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). Even a teaching away from a claimed invention does not render the invention patentable. See Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998), where the court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed." To further clarify, a prior art opinion that a claimed invention is not preferred for a particular limited purpose, does not preclude utility of the invention for that or another purpose, or even preferability of the invention for another purpose.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Ogura to arrive at the claimed invention.

In reference to claims 6 and 7, Ogura et al. substantially teach all aspects of the invention but fail to teach the first pressure is less than about  $1 \times 10^{-5}$  Torr and a second pressure less than about  $1 \times 10^{-3}$ . However, the selection of the claimed pressures is obvious because it is a matter of determining optimum process condition by routine experimentation with a limited number of species to obtain desired implantation conditions. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the above-mentioned pressures to arrive at the claimed invention.

***Allowable Subject Matter***

3. Claims 8-13 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor suggests the step of actively controlling the amount of fluid introduced into the vacuum chamber based upon a measurement of a parameter measured in the chamber.

***Response to Arguments***

5. Applicant's arguments filed 08/30/2004 have been fully considered but they are not persuasive.

Applicants argue, "...neither Sakaguchi nor Ogura teaches or suggests implanting ions in a semiconductor substrate in the presence of a background fluid, introduced into a chamber in which the substrate is placed prior to commencement of

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ion implantation...". In response to this argument, as mentioned in this Office Action, Ogura et al. teach a non preferred embodiment of the invention where there is no separation of the between the plasma chamber and the reaction chamber, with the disadvantages of hindering controlling the accelerated ions, resulting in difficulties in obtaining an abrupt interface of the insulation film to the silicon layer overlying the insulation film (column 7, lines 11 – 21), and although not taught as a preferred embodiment, Ogura et al. teaches this embodiment nonetheless, and disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). Even a teaching away from a claimed invention does not render the invention patentable. See Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998), where the court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed." To further clarify, a prior art opinion that a claimed invention is not

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preferred for a particular limited purpose, does not preclude utility of the invention for that or another purpose, or even preferability of the invention for another purpose.

**Conclusion**


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Julio J. Maldonado whose telephone number is (571) 272-1864. The examiner can normally be reached on Monday through Friday.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571) 272-1855. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the customer service number for group 2800 is (703) 306-3329.

Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.

Julio J. Maldonado  
Patent Examiner  
Art Unit 2823

Julio J. Maldonado  
November 23, 2004

  
George Fourson  
Primary Examiner